



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/940,517	08/29/2001	Katsumi Hoshino	NIT-296	5216
24956	7590	06/15/2005	EXAMINER	
MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.			MAGEE, CHRISTOPHER R	
1800 DIAGONAL ROAD			ART UNIT	
SUITE 370			PAPER NUMBER	
ALEXANDRIA, VA 22314			2653	

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/940,517

Applicant(s)

HOSHINO ET AL.

Examiner

Christopher R. Magee

Art Unit

2653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 1,3,4,6,7,9,13,15,16 and 18 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-12 is/are allowed.
- 6) ☒ Claim(s) 2,5,8,14 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. The reply filed 2/4/2005 was applied to the following effect: All relevant objections and 35 USC § 102 rejections are withdrawn as being satisfied.
2. Claims 1, 3, 4, 6, 7, 9, 13, 15, 16 and 18 have been cancelled.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 2, 5, 8, 14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akio (JP- JP 11-265503) in view of Sato (US 6,477,006 B1).

Regarding claims 2, 14 and 17, Akio shows a magnetoresistive head comprising a magnetoresistive layer (12) which converts magnetic signals to electric signals, a pair of electrodes (19, 20) for allowing an electrically sensing current to flow across said magnetoresistive layer, upper and under gap layers (15) placed over and beneath said pair of electrodes and said magnetoresistive layer, and upper and under shield layers (10, 11), one of which placed over said upper gap layer and the other placed beneath said under gap layer.

Akio does not teach or suggest either of the upper or under (i.e., lower) gap layers being made of varistor material.

Art Unit: 2653

Sato discloses the use of SiC (i.e., silicon carbide, known as a varistor material) as a gap layer material (col. 8, lines 15-21; col. 9, lines 39-42).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the upper and lower gap layers of Akio out of SiC as taught by Sato.

The rationale is as follows: One of ordinary skill in the art at the time of the invention would have been motivated to make either of the upper and lower gap layers of Akio out of SiC as taught by Sato because the gap layer can be formed by a sputtering or ion beam sputtering process which is superior to an electroplating process in reproducibility and uniformity of the resulting film (Sato; col. 9, lines 48-53).

Regarding claims 5 and 8, Akio teaches the magnetoresistive head employs a material consisting of ZnO, SiC, BaTiO, Si, or SrTiO films or films whose main element is one of these substances as said varistor material (Sections 0041 to 0043 of Akio English Translation).

Allowable Subject Matter

4. Claims 10-12 are allowed. The following is a statement of reasons for the indication of allowable subject matter: Claims 10-12 specify a magnetoresistive head which requires a varistor material "formed in a multilayer wherein the thickness of a film made of Al₂O₃, SiO₂, Ta₂O₅, Bi₂O₅, MnO, NiO, CoO, Fe-O, TiO₂, HfO₂, ZrO₂, or Nb₂O₅ or an oxide film whose main element is one of these substances is 5 nm or less."

Akio (JP- JP 11-265503) and/or Sato (US 6,477,006 B1) do not teach or suggest this feature as claimed in the present invention.

Response to Arguments

5. Applicant's arguments filed 2/4/2005 have been fully considered but they are not persuasive.

The Applicant asserts on pages 12-13:

"However, the head disclosed in Sato is for recording not for reproducing. On the other hand, the head disclosed in the present invention is for reproducing not for recording, and the breakdown of the magnetoresistive layer (this is the problem the present invention solves) occurs only in reproducing. Therefore, the problem solved by the present invention is not disclosed at all in Sato. In addition, the structures and principles are quite different between a head for reproducing and a head for recording, and one of ordinary skill in the art would not have been motivated to apply the use of SiC to the head for reproducing as the Examiner has done in combining the teachings of Sato and Akio. Accordingly, the combination of Sato and Akio does not render the claims 2, 5, 8, 14 and 17 unpatentable."

In response to applicant's argument that *"the head disclosed in Sato is for recording not for reproducing,"* the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period


Art Unit: 2653

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

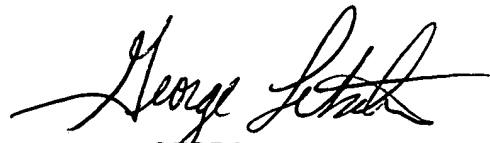
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Magee whose telephone number is (571) 272-7592. The examiner can normally be reached on M-F, 8: 00 am-5: 30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Christopher R. Magee
Patent Examiner
Art Unit 2653

June 9, 2005


GEORGE J. LETSCHER
PRIMARY EXAMINER